

# Solitary superconductivity in a ferromagnet-superconductor heterostructure

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## Abstract

© 2015, Pleiades Publishing, Inc. A ferromagnet (F)–superconductor (S) (F1F2S) three-layer heterostructure has been studied using Usadel equations with allowance for the pair electron–electron interaction in ferromagnetic layers. The appearance of regions with solitary superconductivity on the phase diagram has been predicted for the antiparallel configuration of the magnetization in F layers. Conditions for the possible experimental observation of solitary superconductivity in FFS three-layer structures, as well as for the detection of the electron–electron interaction in ferromagnets, have been discussed.

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